

Claims

What is claimed is:

- 5 1. A method of managing a file lifecycle comprising the steps of:
storing the file on a storage medium having associated therewith a set of policies relating
to file storage locations;
automatically determining from the associated policies when the file is to be moved; and,
moving the file to another storage location within a same or different storage medium
10 when the file is to be moved.
2. A method of managing a file lifecycle according to claim 1 comprising the steps of:
providing a plurality of storage media including the storage medium, each having
associated therewith a set of policies, the policies such that when a condition is met the
15 file is transferred from one storage medium to another in accordance with a lifecycle
stage of the file.
3. A method of managing a file lifecycle according to claim 2 wherein a first storage
medium is associated with active files and a last storage medium is associated with
20 archived files and wherein the file is transferred from the first storage medium to the last
storage medium in successive stages.
4. A method of managing a file lifecycle according to claim 3, wherein a file is
automatically transferred to a storage medium most appropriate for its stage of lifecycle
25 determined in accordance with the policies.
5. A method of managing a file lifecycle according to claim 4 wherein the policies relate
to at least some of the associated storage medium, the file name, the file extension, the
file creation date, the file access date, the file last access date, the file creator, and the
30 current file owner .

6. A method of managing a file lifecycle according to claim 1 wherein the step of storing the file on a storage medium comprises the step of determining, in accordance with the policies, expiration data relating to when the file is to be moved.

5 7. A method of managing a file lifecycle according to claim 6 wherein the step of automatically determining when the file is to be moved comprises the step of comparing the expiration data to present time data to determine if it is indicative of the file having expired its time on the storage medium or on the entire system.

10 8. A method of managing a file lifecycle comprising the steps of:
providing a virtual storage medium having a plurality of storage media associated therewith and having associated therewith a set of policies relating to file storage locations within the storage media;
storing the file on a storage medium within the virtual storage medium;
15 at intervals, determining from the associated policies actions dictated by the policies for performance on the file; and,
performing the dictated actions on the file.

20 9. A method of managing a file lifecycle according to claim 8 wherein a first storage medium is associated with active files and a last storage medium is associated with archived files and wherein the file is transferred from the first storage medium to the last storage medium in successive stages.

25 10. A method of managing a file lifecycle according to claim 9, wherein a file is automatically transferred to a storage medium most appropriate for its stage of lifecycle determined in accordance with the policies.

30 11. A method of managing a file lifecycle according to claim 10 wherein the policies relate to at least some of the associated storage medium, the file name, the file extension, the file creation date, the file access date, the file last access date, the file creator, and the current file owner.

12. A method of managing a file lifecycle according to claim 8 wherein the step of storing the file on a storage medium comprises the step of determining, in accordance with the policies, expiration data relating to when the file is to be moved.

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13. A method of managing a file lifecycle according to claim 12 wherein the step of automatically determining when the file is to be moved comprises the step of comparing the expiration data to present time data to determine if it is indicative of the file having expired its time on the storage medium.

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14. A method of managing a file lifecycle comprising the steps of:
providing a virtual cabinet having a plurality of virtual drawers, each virtual drawer associated with at least a storage medium and a single drawer associated with storage media of a similar nature;

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providing a plurality of policies, a policy associated with each virtual drawer;
storing the file in a virtual drawer by storing the file on at least a storage medium associated with the virtual drawer;
at intervals, determining from the policy associated with the virtual drawer an action dictated by the policy; and,

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performing the dictated action on the file.

15. A method of managing a file lifecycle according to claim 14 wherein the action includes the step of deleting the file from the virtual drawer.

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16. A method of managing a file lifecycle according to claim 15 wherein the policies relate to the storage medium and to dates stored in association with each file.

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17. A method of managing a file lifecycle according to claim 16 comprising the step of: storing in association with each file an expiration indicator indicative of when the file is to be transferred.

18. A method of managing a file lifecycle according to claim 17 wherein the expiration indicator includes a date on which to delete the file from the drawer in accordance with the action dictated by the policy.

5 19. A method of managing a file lifecycle according to claim 17 wherein the expiration indicator includes a minimum time before which the file is to be maintained in its current drawer.

10 20. A method of managing a file lifecycle according to claim 15 wherein the action includes the step of transferring the file from the virtual drawer to another different virtual drawer within the cabinet.

15 21. A method of managing a file lifecycle according to claim 20 wherein step of transferring the file includes the step of archiving the file within an archiving virtual drawer.

20 22. A method of managing a file lifecycle according to claim 15 wherein step of deleting the file includes the steps of determining based on a policy associated with the drawer and based on data stored in association with the file a mode of deletion, and deleting the file in accordance with the determined mode.

23. A method of managing a file lifecycle according to claim 22 wherein the modes of deletion include secure deletion and insecure deletion.

25 24. A method of managing a file lifecycle according to claim 14 wherein files stored in the virtual cabinet are stored within a same virtual storage medium and wherein files stored within each drawer from the plurality of virtual drawers are stored on the one or more similar storage media associated with said drawer.

30 25. A method of managing a file lifecycle according to claim 24 wherein a single virtual drawer forms part of a plurality of virtual cabinets.

26. A method of managing a file lifecycle according to claim 14 wherein the step of determining an action comprises the steps of:

determining from the policy a condition;

5 evaluating each file to determine a presence of the condition; and,

when the condition is met, providing an action associated with the condition as the determined action.

27. A method of managing a file lifecycle comprising the steps of:

10 providing a virtual cabinet having a plurality of virtual drawers, each virtual drawer associated with at least a storage medium and a single drawer associated with storage media of a similar nature;

providing a plurality of policies, a policy associated with each virtual drawer;

15 storing the file in a virtual drawer by storing the file on at least a storage medium associated with the virtual drawer;

upon receiving an access request to access the file, determining from the policy associated with the virtual drawer an action dictated by the policy; and,
performing the dictated action on the file.

20 28. A method of managing a file lifecycle according to claim 27 wherein the determined action comprises the step of: storing in association with each file an expiration indicator indicative of when the file is to be transferred, the expiration indicator determined based on the policy.

25 29. A method of managing a file lifecycle according to claim 28 wherein the expiration indicator includes a date on which to delete the file from the drawer in accordance with the action dictated by the policy.

30 30. A method of managing a file lifecycle according to claim 28 wherein the expiration indicator includes a minimum time before which the file is to be maintained in its current drawer.

31. A method of managing a file lifecycle according to claim 27 wherein the action includes the step of transferring the file from the virtual drawer to another different virtual drawer within the cabinet.

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32. A method of managing a file lifecycle according to claim 31 wherein step of transferring the file includes the step of retrieving the file from an archiving virtual drawer and storing it in another virtual drawer.

10 33. A method of managing a file lifecycle according to claim 27 comprising the steps of determining based on a policy associated with the drawer and based on data stored in association with the file whether the file is to be deleted;
determining based on a policy associated with the drawer and based on data stored in association with the file a mode of deletion for the file; and
15 deleting the file in accordance with the determined mode.

34. A method of managing a file lifecycle according to claim 33 wherein the modes of deletion include secure deletion and insecure deletion.

20 35. A method of managing a file lifecycle according to claim 27 wherein files stored in the virtual cabinet are stored within a same virtual storage medium and wherein files stored within each drawer from the plurality of virtual drawers are stored on the one or more similar storage media associated with said drawer.

25 36. A method of managing a file lifecycle according to claim 35 wherein a single virtual drawer forms part of a plurality of virtual cabinets.

37. A method of managing a file lifecycle according to claim 27 wherein the step of determining an action comprises the steps of:

30 determining from the policy a condition;
evaluating the accessed file to determine a presence of the condition; and,

when the condition is met, providing an action associated with the condition as the determined action.

38. A method of managing a file lifecycle comprising the steps of:

- 5 providing a virtual storage medium having a plurality of storage media associated therewith and having associated therewith a set of policies relating to file storage locations within the storage media;
- storing the file on a storage medium within the virtual storage medium;
- upon occurrence of a triggering event, determining from the associated policies actions
- 10 dictated by the policies for performance on the file; and,
- performing the dictated actions on the file.

39. A method of managing a file lifecycle according to claim 38 wherein a first storage medium is associated with active files and a last storage medium is associated with
- 15 archived files and wherein the file is transferred from the first storage medium to the last storage medium in successive stages.

40. A method of managing a file lifecycle according to claim 39, wherein a file is automatically transferred to a storage medium most appropriate for its stage of lifecycle
- 20 determined in accordance with the policies.

41. A method of managing a file lifecycle according to claim 40 wherein the policies relate to at least some of the associated storage medium, the file name, the file extension, the file creation date, the file access date, the file last access date, the file creator, and
- 25 the current file owner .

42. A method of managing a file lifecycle according to claim 38 wherein the step of storing the file on a storage medium comprises the step of determining, in accordance with the policies, expiration data relating to when the file is to be moved.
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43. A method of managing a file lifecycle according to claim 42 wherein the step of automatically determining when the file is to be moved comprises the step of comparing the expiration data to present time data to determine if it is indicative of the file having expired its time on the storage medium.

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44. A method of managing a file lifecycle according to claim 38 wherein the event relates to an amount of free space on the storage medium.

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45. A method of managing a file lifecycle according to claim 38 wherein the event relates to an amount of space occupied by files of an individual compared to a quota of space allocated to that individual.

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46. A method of managing a file lifecycle according to claim 38 wherein the event relates to at least one of initial storage of a file and modification of said file.

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47. A method of managing a file lifecycle comprising the steps of:
requesting a file to be stored in a virtual cabinet in a virtual volume;
evaluating the file storage criteria based on cabinet policies of the virtual cabinet to determine a physical location wherein the file is to be stored; and,
storing the file in the determined physical location.

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48. A method of managing a file lifecycle according to claim 47 wherein the cabinet policies relate to file types of the file to be stored.

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49. A method of managing a file lifecycle according to claim 48 wherein a virtual cabinet comprises a virtual drawer and wherein a virtual drawer forms part of more than one virtual cabinet.

50. A method of managing a file lifecycle according to claim 49 wherein the virtual cabinet forms a context within a context based file lifecycle management system and

wherein a file created within a context of a virtual cabinet being subject to the policies of said virtual cabinet.

51. A method of managing a file lifecycle according to claim 47 wherein the step of
5 storing the file comprises the step of storing the file in association with the virtual cabinet.

52. A method of managing a file lifecycle according to claim 51 wherein the file is
governed by policies of the associated virtual cabinet and wherein some actions dictated
10 by those policies are performed on the file throughout its lifecycle.

53. A method of managing a file lifecycle comprising the steps of:
selecting a virtual drawer within a virtual cabinet;
requesting a file to be stored in the virtual drawer; and,
15 evaluating the file storage criteria based on policies associated with the virtual cabinet;
in accordance with the file storage criteria, storing the file in association with the virtual cabinet.

54. A method of managing a file lifecycle according to claim 53 wherein the file is stored
20 within the virtual drawer and is accessible within the virtual drawer within each of a plurality of virtual cabinets.

55. A method of managing a file lifecycle according to claim 53 wherein the policies
relate to duplication of file data within a plurality of files.

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56. A method of managing a file lifecycle according to claim 55 wherein the policies
relate to load balancing for the virtual cabinet based on access to data that is stored in
duplicate.

57. A method of managing a file lifecycle according to claim 53 wherein the policies relate to one of replication, backup, mirroring, and redundancy of file data storage within the virtual cabinet.

- 5 58. A method of managing a file lifecycle according to claim 57 wherein the policies relate to load balancing for the virtual cabinet based on access to data that is stored in more than one physical location.

59. A method of managing a file lifecycle according to claim 53 wherein the policies
10 relate to one of version control.

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